

Aviation News

McGRAW-HILL PUBLISHING COMPANY, INC.

JUNE 3, 1948



Every Major UNITED STATES AIRLINE

uses
Honeywell

"MODUFLOW"
CABIN TEMPERATURE
CONTROLS



MINNEAPOLIS
Honeywell
CONTROL SYSTEMS



CREATIVE ENGINEERING
Makers of the famous M-H
Electronic Automatic used
on four engine bombers.

THE AVIATION NEWS

Washington Observer



AIR POLICY SPLIT—Although hearings on the Mitchell air policy board fell well still in their early stages last week, an apparent split is developing between government and industry had developed. First witness, Fleet Admiral Chester Nimitz, in effect opposed Mitchell's plan by asking for establishment of two policy boards, one military, the other commercial. Eugene E. Wilson, speaking for the industry, later stated the independence of the two. Next, CAA termed the Mitchell board unnecessary, declaring the work could be done by the Air Coordinating Commission, which the tip-off on what is likely to be a Government solid front. ACC, with representatives of CAA, Army, Navy, State, and Post Office, appears dead set against creating a national policy board which would necessarily encroach on ACC's functions, although these have never been authorized by legislation.

GUIDED MISSILE DEVELOPMENT—Although the publicity has subsided, the fight between AAF and Army's Ordnance Department, over control of guided missile work, is far from dead—and the Navy figures in the squabble. Ordnance is carrying on constant behind-the-scenes activity to discredit the AAF, while Navy is publicly, and somewhat placidly, pointing out that it, too, has been busy on guided missiles and, had a sizable force of technicians standing in the event firing of German V-2's at White Sands, N. M.

CAB'S LIBERALS AND CONSERVATIVES—The Latin America case may point the way to CAB's thinking in other important international cases. Action is due on the Pacific, Boliviana, and South American docks. Member Josh Lee demonstrated in the most recent decision that he is thinking in very liberal terms when it comes to airline expansion. Vice-chairman Oswald Ryan and member Wallace Branch appeared as conservatives, basing their opinions strictly

on the record and their interpretation of economic consequences. Chairman L. Welch Pogue was most inclined to Lee's camp, with a careful balancing of national and economic interests. Because he has been on the board a comparatively short time, Col. Clarence M. Young is not participating in these international cases.

AIRPORTS AND FREE ADVICE—Grain advice on airports is springing up all over. Commerce Department's Office of Small Business is the latest group preparing to offer the hand of welcome to those who propose going into the "airport business." Obviously encouraged by Secretary Wallace, the group's officials deny they will try to gain control, but insist that small airports will be most likely to succeed if planned properly in advance. Hard-boiled, realistic airport operators say newsmen will learn more, in far less time, by listening and taking at present established airports rather than absorbing weighty planning propositions written by Washington-based Commerce Department civil service "specialists."

SYMINGTON vs AAF—Some top AAF officers are beginning to wonder a bit about their old-time Assistant Secretary of War for Air, W. Stuart Symington. Three things, in the main, are responsible for their attitude. Symington apparently is not going along with recommendations of the Air Coordinating Commission and is subverting them for review and comment to the Army-Navy Maritime Board. He is questioning the need of separate procurement legislation for the AAF (Air Staff's opinion on the need for this has been covered previously in "Aviation News"), and, finally, the most doubtful AAF officers believe Symington is relying on the unification issue as if he were the Navy's representative.



Panekel C-12 Packet in recent experiments at the Greenville, S. C. Army Air Base, towing two gliders, a CG-16, left, and CG-4A.

ten Model 34's, with expected Fall delivery.

Design Differences—Like tender designs of other amphibians, the Beech Model 34, designated Twin-Quad, conforms to specifications laid down by the Feder Airline Association, but differs greatly in some design aspects. Probably most unusual is power plant arrangement. Two engines are spaced to each propeller so that an appearance it resembles a conventional two-engine plane.

The engines will be of 350 hp each—reportedly air-cooled fan-cooled, especially built for the amphib— and arranged in tandem and contained entirely within the wings. Any one of the engines may cut out, but there will still be pull on that side and with a power loss of only 25 percent it is calculated that on three engines the Model 34 will be able to climb to 10,000 ft.

Another striking design departure will be in the tail assembly where Beech plans to use the "butted" tail (Aviation News, Jan. 1, 1945) with which the company experimented during the war.

New Propellers—Propellers will be the recently-standard Hamilton Standard "baby" Hydromatic (See Preliminary) of 10 ft 7 in diameter. With these new props, the plane is designed to cruise at 4,900 feet on 60 percent power at 142 mph. With less wing loading and its relatively large slow propeller, the Model 34 will land in 2100 ft over a 50-ft obstacle and take off in 1800 ft.

As a possible indication of the market at which Beech is shooting

the plane is designed to carry pickup equipment.

Pending production on the Twin-Quad, Beech is continuing work on the Model 17 Silver Jet, i. e., the company has maintained a \$2,800,000 volume on the aircraft. Beech now employs 4,000 workers at Wichita and claims to be the largest employer in Kansas.

NATA Seeks Man For Executive Post

Membership (airship) successful as organization goes to expand and establish new groups.

National Aviation Trade Association is again actively looking for an executive director since Jack Friel, named temporarily to the post a month ago, named his new post as sales manager of *Aviation* (also see *Frontier Today*).

Until selection of his NATA successor, Friel is still maintaining the association's offices at 1369 Constitution Avenue, in Washington, and handling such NATA details as new, Milwaukee, a former member in the AAP is being considered for the job.

In the month since he assumed the strong executive directorship of NATA, Friel has been contributing to the membership campaign which was touched off several months ago in New York with a meeting of NATA's Board. 2 Section of the drive is indicated by his report that the campaign is now operating at a profit.

Seek Strength—The effort to re-

establish NATA as a strong, effective organization was reinforced with a Chicago meeting of Region III and a conference involving Region V is tentatively scheduled for Omaha in July during which it is hoped duration may also meet.

Meanwhile, there have been several state meetings resulting in the formation of state associations. This was one of the recommendations to emerge from the Region II meeting, that the regional organizational set-up be replaced by state bodies. So far, there have been about 15 state groups established, all of which are affiliating with the national NATA.

Future Amendments—Problem of adequately financing national headquarters remains to be settled, but there is some feeling that an effective approach might be a flat assessment on regional associations. Considerable opinion exists in NATA that the position of executive director should be paid perhaps twice the previous salary of \$5,000.

Due to the delay in finding an executive director, and the decision to prolong the membership campaign, the national convention has been postponed. It was scheduled for this Spring, but no new date has been set. Although work on revising the constitution and by-laws has been completed, presentation to the members must await the convention.

Truman Asks \$55,000,000 For Airport Development

The President last week requested the Senate to tack a \$55,000,000 appropriation for airport development onto the House-approved 1947 fiscal year Civil Administration Appropriations appropriation bill.

Submitted to the Senate Appropriations Committee, the request included \$3,600,000 for airport planning by the CAA, \$48,800,000 for federal matching funds for airport construction in the several states, and \$3,300,000 for federal outlays for airports in Alaska, Hawaii, and Puerto Rico.

The President also asked the committee to add a \$25,000,000 appropriation to the coming-year CAA budget to provide funds for the certification of non-scheduled air carriers. The increase would provide (1) \$750,000 for the establishment of standards of operation and the inspection of operating procedures of non-scheduled carriers as interstate and overseas transporters; and (2) \$90,000 for personnel and equipment for a certification section in the CAA.

Merganser Flight Test Is Scheduled for Fall

British transport designed for short haul and feeder lines will reflect all features of large models.

Perseus Aircraft Ltd. plans flight tests this Fall for the Merganser, a two-engine, high-wing monoplane for use as a passenger or cargo feeder liner.

In it, Perseus has incorporated all features and refinements of large transports, aimed down to size. It will be powered by two DeHavilland Gipsy Queen 50 automatic, in-line engine development 185 hp each for takeoff. Major dimensions include 47' 9" span, 38' 6" length and height of 15' 9".

A wide variation in load combination will provide maximum utility. The Merganser has, charter service, aerial taxi or private aircraft. Maximum loading conditions will accommodate either 315 lbs. of cargo or eight passengers and pilot over a range of 300 miles.

Efficient Sixth Seat—The standard six-passenger version allows 300 lb. of baggage and provides 65 cu ft. of space per passenger. A sixth seat may be located within the crew compartment in the nose adjacent to the pilot to accommodate either an additional passenger or a combination air-gallop radio operator. Unusual features of the Merganser include:

- Removable dromedary panels within the cabin which permit quick and easy conversion into the various passenger-cargo combinations.
- Over-the-wing fittings are so designed as to be hidden in the passenger version.
- Cabin heating and ventilating control equipment.
- Dynamometer engine supervision, quick-releasable "package" power plant installation, constant speed full-throttle propellers.
- A separate toilet compartment in the aft end of the cabin.
- Air-operated triple retractable landing gear with pneumatic brakes actuated from the pilot's control wheel. The same wheel is non-steerable.

Top Speed 180 mph—The Merganser has a design top speed of 180 mph at sea level and 150 mph at 5,000 ft. It will cruise at 175 mph at sea level and 153 mph at 5,000 ft. It has a flap-down stalling speed of 89 mph.



British Production—An artist's sketch of the Merganser, planned by Perseus Aircraft, Ltd., as a six-passenger plane for feeder airlines, charter service, or as an executive plane. Despite high-wing design, aircraft is planned to have triple undercarriage, with a non-steerable nose-wheel.

A rate-of-climb at sea level of 3,015 ft. min. is expected with 1104 ft. min. at 5,000 ft. Service ceiling at 24,000 ft. Present estimates indicate a takeoff run of 1600 ft. to clear a 50-ft. obstacle at sea level.

The Merganser will have a useful load of 3115 lbs. and is expected to weigh 8700 lbs. fully loaded. This will give a wing loading of 21 lbs. per sq. ft. and a power loading of 11.35 hp per hp.

Convair Flies New Pusher Monoplane

Radically-Designed Lightplane Has 80 HP Engine Buried in Fuselage, Aired by Perseus Aircraft.

A radically-designed two-place pusher monoplane which has been successfully test-flown at Fort Dodge, is being developed by Consolidated-Vultee Aircraft Corp., officials have advised.

The plane, designed by E. M. Grews, Jr., Convair's chief light-plane development engineer, is a low-wing cabin model with the 80 hp engine buried in the fuselage. Power is shafted from the engine to a three-blade propeller located behind the plane's single fin and rudder.

The pusher is one of several experimental planes which have been or are being studied by Grews and Convair for possible future production as personal planes.

Among them are a version of the Williamson roadster plane, a roadster sky car and helicopter, both designed by William B. Stout, the convertible-wing Sprit, and a new pusher.

C.A. Rheinstrom Heads Air Consultants Firm

Soother new American Airlines vice-president, George Doyle chief of Penn. Middle East region; other appointments.

Charles A. Rheinstrom, 46, who recently resigned as vice-president in charge of sales of American Airlines, has established his own firm of aviation consultants with headquarters in New York.

The firm will provide a general advisory service to airlines and other aviation organizations on sales, traffic, financing, public relations, engineering and operations. It will also offer counsel to firms and prospective users of air transportation.

Rheinstrom was with American for 15 years. As general traffic manager for the New York region, he was instrumental in securing the air traffic credit and plan.

M. T. Soother was elected vice-president of American Airlines in charge of state affairs. He was a member of the Air Transport Command and has been with American since 1938.

Other industry appointments are:

Fleming—George A. Doan, Jr., former manager of the Airline Division in the new regional manager for the Middle East with headquarters in Ankara, Turkey.

Kyle—Richard D. Peterson, who recently joined Ryan from Sales Aircraft Co., has been named national sales manager for the metal products division.

Glass—Marvin—M. R. Schermerhorn, Jr., controller, and G. T. Wilby, vice-president in charge of manufacturing, were named to the board of directors.

Douglas—C. C. Pearson has been named eastern representative and



AZORES AIRFIELD:

Extending for the first time are photographs of the elaborate wartime airfield established by the United States from the Azores. From the Azores, the United States has the field at Santa Maria Island, Azores. At Air Transport Command bases, slide rack on the Azores helped forward equipment and supplies and will play an important part in the transatlantic air commerce picture.

assistant to Donald Douglas with offices in New York.
► Eastern—Herbert R. Cook, Memphis office broken, was elected a director of Eastern Airlines. He was a World War I ace.

► Atlantic Airlines—Harry D. Miller, a pioneer in the stock exchange firm of Nugent & Igoe, East Orange, N. J., and Frederick Greenhart, a director of National Aircraft, Inc. of New Orleans and the Glendale Aircraft Co., Fort Worth, have been elected directors of Atlantic Airlines, formerly Ohio Airlines.

► Pacific Airlines—Earl Hurlbert was elected president. Other officers are: E. O. Locher, vice-president, chairman, General Edwards, vice-president and assistant to the president, Joe Kall, vice-president, merchandising, Victor Dennis, secretary-treasurer, and Stanley A. Wilson, assistant secretary.

► BIA—W. J. Kane, former assistant sales manager of Douglas Aircraft, has been named vice president representative for Swedish Intercontinental Airlines with headquarters at the Boeing Seattle plant where four B-29s are being built for the line.

Bellatrix Spearheads French Market Quest

Two-engine airliner said for export market, cruises at 215 mph at 21,000 ft cruise.

A bid of the French aircraft manufacturing industry to secure its pre-war position is seen in the release of details on the S.C.A. 845-3000 Bellatrix two-engine airliner, prototype of which is now undergoing flight tests.

Although remnants of the Curtiss Commandos in general outline, the all-metal transport differs considerably in detail. It will seat 34 passengers and sleep 36. Span is 94 ft., is 60 ft. long and weighs 18 ft.



French "Commando Plane"—One of the earliest products of the French export industry is at checkout phase in its 20-passenger transport, the S.C.A. 845-3000, built by the Société Nationale de Construction Aéronautique de Sud-Ouest.

high. Weight is approximately 26,000 lbs. fully loaded and it has a normal range of 1,850 miles at a cruising speed of 215 mph. A drop-out speed of 214 mph is claimed for the new craft, roughly twice as high as that of projected U. S. craft of comparable capacity.

The fuselage is divided into two levels, the upper portion houses the crew and passengers, the belly an emergency landing gear and cargo. The cabin is divided into three compartments with a double row of seats along the port side and a single row along the starboard side. The main compartment, located between the open, comprises a private sleeping room for six passengers.

The cabin is pressurized and maintains 9,000 ft. atmospheric conditions up to an airplane altitude of 38,000 ft. It is completely soundproof and air conditioned, the latter provided by a compressor and heat exchanger mounted on each engine. The crew consists of a pilot, co-pilot, flight engineer, and radio operator, all located in the streamlined nose compartment, and a flight attendant in the passenger cabin. Complete lavatory and bar equipment is carried.

The Bellatrix is powered by two Gnome & Rhone 14 R 5 double-row radial air-cooled engines developing approximately 1,320 hp. Its takeoff time is 1.5 min. for 1,000 ft. Two-speed supercharging provides 1,200 hp. at 16,700 ft. Fuel capacity is about 1,600 gals. with both tanks delivering fuel to either or both engines. The 12 ft. controllable pitch propellers are electrically operated from the 24-volt aircraft electrical system. The engine cowling are fully hinged to provide ease of maintenance.

The transport has a top speed of 320 mph at 25,000 ft. and cruises at 215 mph at 20,000 ft. It can clear a 36 ft. obstacle with a takeoff run of approximately 3,000 ft.

Rigid Industry Control Failed, Says Nazi Expert

German War Production Chief Speer insists new measures must be enacted to get most out of total effort.

An answer to some current thinking on high civilian government circles both here and abroad that greater controls over industry are needed to make possible speedy industrial mobilization in time of war is seen by the aircraft industry and military officials in the report at the inauguration of German Minister of Armaments and War Production Albert Speer.

First heard by J. Gordon Ward, Jr., president of Fairchild Engine and Airplane Co., before the congressional hearing testimony on the Mitchell bill to establish a national air policy board, the report proves that the totalitarian system of industrial mobilization failed completely in Germany and had to be replaced by an "adaptation of industry" which somewhat resembled our War Production Board, and which greatly increased output.

► Plans Not Frictionless—Chief trouble in the Nazi system arose, according to Speer, from the fact that the authoritarian regime's planning was too rigid, as the German side. The Germans did not formulate their industrial mobilization plans in cooperation with business leaders and engineers.

"In Germany," said Speer, "those who occupied themselves with war production were professional officers, a closed corporation without the benefit of fresh outside minds. Consequently, we have in Germany economic leaders who were alien to industry and who were therefore responsible for a production far too low considering the existing potential."

Speer emphasized that Germany's chief mistake in industrial mobilization was setting up "a permanent apparatus long before the war with the job of planning and then executing it correctly. The longer it worked on the job the less it took industrial considerations into account, and the greater became its mistakes."

► Solved Technical Work—The Nazi Minister also pointed out that military officers supervised economic and technical work as demagogues. It was, therefore, relegated to the less competent.

The failure of government decree greater production under

threat of punishment was stressed greatly by Speer.

On the other hand, when Speer took over in 1942, he worked largely with skilled engineers and technicians, abundant as much as he could what he termed "commercially trained" experts whose employment was on the profit motive.

The failure of government's decree greater production under threat of punishment was stressed strongly by Speer. German armament makers had worked under the constant 50 warning of court-martial and execution. Speer ruled court-martial and labor to build an organization based on confidence. The relief of being able to work as a non-political organization gave the industrialists new enthusiasm.

► Criticism Is Spurred—Another step in production, noted by Speer, was being pointed out by authorities in the country a criticism. One of Speer's questionnaires declared there was too much criticism in the U. S. The German Minister replied it is better to have much criticism than none. When the plant managers "have lost the impulse to report to their superiors, then the danger of mental stagnation at the top becomes very great."

Time and time again, Speer is returned to the thought that theoretic planning by a group of government bureaucrats did not aid, but hindered industrial mobilization. When he took over the war production at Germany's war production, he assigned the system under which military officials in government departments must direct to industrialists. He replaced this with a set-up into which he drew leading technicians, put them in charge of various groups roughly corresponding to WPA's industry advisory commission, and made them responsible.

The AAF, which, together with the Aircraft Industries Association, is distributing the report of the Speer interview, is studying closely the information from the view that the Nazis gave the seed text to strict government control over industry, and found that in the end it had to be replaced with the system that was used in the U. S.

RAF to Visit U. S.

The Royal Air Force will send a squadron of Lancaster bombers to participate in the celebration of U. S. Air Force Day, Aug. 1, it was announced last week.



FLYING JET LABORATORY:

The Boeing B-29 Superfortress, loaned by AAF to General Electric, to be used by GE to make air-borne tests of jet and gas turbine engines. Shown suspended from the B-29's bomb bay door is a turbo-propeller-shaped GE axial-flow turbo-jet engine.

Vultee Strike Ends With 18 Cent Raise

Production resumed as Stinson Voyager at Wayne plant, other cases pending.

Consolidated Vultee Aircraft Corp. last week resumed production at its four-plant Voyager 100 at its Stinson-Dorwin plant at Wayne, Mich., following termination of an eight-week strike.

The new agreement with the C.I.O. United Automobile Workers, representing about 100 production employees, provides for annual wage increases of 15¢ on base. Management works ago had agreed to an 18¢ increase, but the union refused to end the strike, which began April 2, until all union were settled on the contract signed. The strike was marked by rioting and a 189-car blockade of the road leading to the plant by the strikers.

► 18¢ Rise—Based on the statement followed by less than a week as end of the strike at the corporation's plant at Fort Worth, Tex., which began Feb. 26. Some 4,800 employees involved will get a 18¢ raise, according to U. S. Civilian Service reports. Also, too, there were picket-line disturbances, mass arrests of strikers and other disturbing incidents.

A third Consolidated strike, involving 8,400 workers, ended May 11 with an 18¢ increase at the San Diego plant. It had begun Feb. 4. The International Association of Machinists represented the strikers in both the Fort Worth and San Diego plants.

► Reach Agreement—The Civilian Service reported tentative settlement of a fourth strike, that of the Aviation Corp., Williamsport,

Pa., which began Jan. 14. The 500 strikers were to act on the proposed settlement terms last week.

Strikes listed by the Consolidation Service as still in progress at aircraft plants last week included 400 employees at Bellows Aircraft, Wilmington, Del., and 500 employees at Ranger Aircraft Co., Farmingdale, Long Island. The Ranger strike began April 24 and the other May 14.

Aircraft Shows Set For Cleveland, L.A.

The two authorized air shows of the U. S. aircraft industry will be staged in Cleveland and Los Angeles, it has been announced by the Aircraft Industries Association which also revealed that Clyde M. Vandenberg has been appointed as executive director of the national aircraft shows.

The first event, to be held in Cleveland, is scheduled for Oct. 4 through 12, while Los Angeles expansion has tentatively been set for some time in November.

The Cleveland show will be held in the surplus plant occupied in wartime by the Fisher body division of General Motors, and is the first of the two official shows which AIA has decided to sponsor each year. (Associated Press, Aug. 25, 1948). Present plans contemplate that the aviation aircraft industry—military, commercial and private plane builders—will be represented at both shows.

During the Vandenberg was general manager, Aircraft War Production Council, East Coast. Since its dissolution he has been contacted with N. W. Ayer & Son, advertising agency, from which he's on leave.

Flying Doctors

And now, it's the Flying Doctors—

Mountain physicians who use airplanes in their professional work and for pleasure, but with structured organization of the Flying Doctors of Missouri. President is Dr. W. F. Sanders, of Bellevue. Officers are Dr. J. G. Bennett, Buffalo, vice-president, and Dr. Harry Farnas, Jefferson City, secretary-treasurer.

Practiced along lines paralleling the better-known Flying Paramedics of America, the Flying Doctors will perform one of their first official acts at a breakfast for pilots at the Eldon (Mo.) Model Airport dedication June 8-9.

Jack Frost Gets Sales Post With New Air Parts Manual

Jack Frost, Washington, D. C., has been appointed sales manager of Aeroquip, a new parts manual for aircraft service operation which is to be published later this year by the Steck Co., Austin, Texas. Frost retained as senior executive director of the National Aviation Trade Association, effective June 1, but will remain in Washington in his new work. Prior to going with NATA, May 1, he had been assistant manager of the National Aeronautic Association. The manual is designed to simplify the "where-to-find-it" problem for dealers and repair stations and will be distributed free to every operator in the country.

Reaction Motor Head New President of Rocket Society

Lowell Lawrence, Jr., president of Reaction Motors, Inc., of Pompton Plains, N. J., and long-time contributor in rocket work, has been elected president of the American Rocket Society, vice-president is Roy Healy, jet propulsion project engineer of the Air Technical Service Command. G. Edward Pendergast has been re-elected secretary.

Aak Airport Funds

Recommendations that Arizona set aside state taxes collected on aviation gasoline, estimated at approximately \$250,000 a year, to match federal funds allocated for airport development, has been made by the state aviation committee, and will

Briefing For Private Flying

BETTER BATTERIES—Cessna Aircraft Co. engineers have been asked by National Aircraft Standards committee of the Aircraft Industries Association to start a study on development of lower cost, higher performance batteries for personal planes. Current work with the standardization group at the battery manufacturers, and with other interested groups. The battery study is part of an overall light plane standardization engineering study which is being made for the standards committee by Textron Aviation.

FILMS AVAILABLE—Thirty-one aviation training films on various subjects will be loaned by CAA to schools, flying clubs and club and aeromarine organizations, through the 20 CAA airway traffic control system. The list includes both film strips, for use like slides, in 35 mm. projectors, and 16 mm. motion picture films. They will first be available in the following cities: Fairbanks, Alaska; Seattle, Los Angeles, Denver, Ft. Worth, Kansas City, Mo.; Chicago, Atlanta, Washington, and New York. It is expected that additional films, developed by the Army and Navy for war-time training, will be turned over for CAA for similar loans, in the near future.

CUB PICKUP—All-American Aviation, Inc., Washington, Del., is developing a small pickup unit, for use by Maurice Fitzgerald, Buffalo aerial photographer, in his Piper Cub. Fitzgerald plans to use the unit, to fly over golf courses, ball parks and other sports and news locations, and deliver a container from a ground station, containing film just "shot" by his cameraman on the ground. He would then fly this container over downtown Buffalo, to drop it on the roof of the press building for immediate developing and publication. The AAA unit, which uses manually controlled equipment throughout, is capable of picking up as much as 16 pounds at a speed of 70 mph.

RADIO COMPASS LOOP—A new plastic-based 4-inch diameter loop antenna for a radio compass, described as the smallest ever produced yet with greater sensitivity than the larger loops now in use, has been developed by Louis Lee, Grand Rapids, Mich. The installation on President Bill Lee's new Beechcraft flying laboratory weighs only 1.3 lbs. installed and mounted only 0.5 lb. drag in a test flight at 150 mph. A servo unit automatically rotates the loop to the usual null position when it is turned in any particular direction. The antenna is expected to be widely used in private planes with radio equipment.

AVIATION MAJOR—Southwest Texas State College, San Marcos, is planning the distinction of being the first college in the country to offer its students the opportunity of taking a major in aviation. Retired veterans who are attending the college, and who have already completed credit training in the JAF received college credit for 18 semester hours in aviation. The college provides flight instructions, using a PT-19, BT-13A, three Textronicals and two Piper Cubs. With approximately 25 aviation majors now enrolled the college is looking forward to a large increase in enrollment in the field, from 610 who can take the laboratory courses and earn commercial, instrument and instructor tickets, at government expense.

MASS MARKET IN RENTALS—The lightplane flyers who rent planes rather than own them, will be a very large proportion of the total market in the immediate future of private flying, in the opinion of Joseph Gerside, president of Wiggins Airways, Norwood, Mass. In a recent talk at Atlantic City, Wiggins predicted that every airport would have one or more operators who make plane rentals their principal business. He pointed out that operators do more without the plane or airport is satisfy the needs of the cross-country vacation market, but expressed confidence that personal aviation can give the mass market what it wants as soon as these are made available.

—Alexander McNulty

be presented at the next state legislative session. Currently, gasoline tax collected on aviation gasoline

by the State Highway Commission, is refunded by the state upon application of the plane operator.



WARREN McARTHUR MODEL 30-C PASSENGER TYPE

DISCERNING PASSENGERS OF THE AIR ENJOY IN THIS NEW McARTHUR MODEL, SUPER COMFORT, RARE CONVENIENCE . . . BOTH FORE AND AFT FACING . . . MAY BE PLACED ON EITHER SIDE OF AISLE...FACES OPPOSITE FOR BRIDGE OR DINNER.

WARREN McARTHUR CORPORATION
ONE PARK AVENUE NEW YORK CITY

PRODUCTION

AAF Contracts Boost Allison Into Engine Production Lead

Jet J-33 for Shooting Star or V-1710 for F-86 Mustang are outstanding power plants for Army fighters; program increases employment.

With firm AAF contracts that will assure large-scale uninterrupted production for the balance of this year and all of 1947, Allison division of General Electric Corp. is now the country's largest producer of engines for the AAF, the company has revealed.

As production is concentrated on power plants for AAF's post-war fighters—both jet and reciprocating—Allison appears in an unusually favorable position to continue a rise that during the war brought it up to one of the most widely-known and largest producers of aircraft engines.

▲ Allison's J-33 jet engine, formerly known as the J-48, which powers the Lockheed P-80, and of which Allison is the sole producer and the world's largest manufacturer of jet engines.

▲ An improved V-1710, liquid-cooled reciprocating engine which powers the North American P-51 Mustang, only conventionally-

powered fighter slated by AAF. Deliveries of these two types by the end of 1947 will amount to about 8,000,000 hp, according to Allison's general manager, E. B. Newell. To meet that program, Allison will have to employ 6,000 workers—still far below its wartime peak, but substantially above present 4,000.

The program will entail construction of all of Allison's engine manufacturing facilities, including the big 2,000,000-square foot Maywood plant near Indianapolis, Ind., which is being occupied under a new lease with the Reconstruction Finance Corp. That plant, on the Army's standby list, had never gone on surplus status and is being used by Allison under special lease for its AAF program.

▲ Built "Mace" Engines—Allison, which has been producing engines since before the first World War, attained stature as a volume engine manufacturer during World War II when it turned out the engines for

the P-38, P-40, P-42 and P-51 fighters. It had, however, been important if little known in aviation for years before. It built the powerplants for the dirigible Macon in the early 1930s; an Allison engine was the first to pass the Army type tests for engines in excess of 1,000 hp.

Allison designed and built the unique buried engine and extension propeller combination which was individually successful, in the face of skepticism, in the P-39 and in the experimental AAF X-34-42 (Brewster) Douglas-built bomber.

The company still has firm belief in the efficiency of the buried-engine-extension-shaft arrangement for commercial use, regardless of the fact that several airlines are reported to have advised Douglas that the DC-4, civil version of the X-34-42 cannot be considered unless powered with radial, air-cooled engines. On its own, Allison is going ahead with test installations on a DC-4 and, for the Army on a DC-6 (XG-114).

▲ Built G-E Models—Allison took over production of the J-48 jet engine, developed by General Electric which is now engaged on other experimental jet types. In addition to getting the J-48, now given the Army designation of J-33, in mass production, Allison has guaranteed performance until it yields 4,200 hp thrust at sea level.

Probably on the basis of its record with the J-33, Allison is expected to handle the production job on the newer, more powerful GE jet, the TG-130.

Allison has also improved its own reciprocating engine, the V-1710. During the war, the rating of this engine advanced 100 hp. The latest model, on which delivery will begin this fall, will be rated at 2,000 hp and give the P-51 a top speed approaching 500 mph.

New Brake Patent

A patent for a new type of auto-dynamic brake for airplanes, newly issued, to Robert G. Campbell, Cuyahoga Falls, Ohio, has been assigned to B. F. Goodrich Co. The device patented is described as an elastic shock absorbing and the cross-section of the fastings, with front and rear attachments to the fuselage surface. The sheet may be expanded, by adding a tubular structure under the covering. This causes the covering to assume a triangular shape in cross section, striking out from the fuselage skin to increase drag and slow plane.



FLIGHT LABORATORY

General Electric's flight test laboratory, to be dedicated June 21, is shown for the first time in this serial view. Dedication ceremonies will include showing of latest models of military and naval planes in development on which research accomplished during the war.

THE LATEST

STROMBERG

ACHIEVEMENT

*a vital contribution to
light plane safety*



The new non-icing injection-type carburetor

The new Stromberg PS Series Injection Carburetor eliminates normal ice formation by the refrigerating effect of fuel vaporization. This important safety feature avoids frost clogging the fuel line and the venturi and below the carburetor and enters the engine manifold, instead of the usual practice of discharging the fuel by various means within the carburetor.

Other safety and performance features of injection carburetors include freedom from gummy deposits in throat, choke and banks, accurate predictability of fuel consumption, and automatic compensation for temperature and altitude effects. Stromberg PS Series Carburetors are a light plane adaptation

of the principles of the Stromberg Injection Carburetors which were previously universal equipment on wartime airplanes. Regular equipment includes a vacuum-operated anti-icing pump and a combustion mixture control valve cut-off. Automatic mixture control and power enrichment features are optional. Built in an order, for engines ranging from 50 to 100 h.p. to 500 h.p.

It will pay you to look into the extra performance and safety of Stromberg Carburetors at original factory equipment for light planes. An increasing discovery factor will be actual engine tests.

Circle 1 on page 107



Bendix

PRODUCTS
DIVISION



Bendix Aviation Corporation • South Bend 30, Indiana

Lifeline

FLYING VIA TACA, is more than a luxurious way of Latin American travel.

Much more.

TACA is a lifeline, span of metal and air and the skill of men . . . that links town to town, coast to coast, time to time, family to family and friend.

So TACA has taken steel miles to life . . . flying in every part of machinery, every seat and bolt, all the people all the food—even the water to drink.

So TACA has given wings not alone to the big businessmen and the important government official . . . but to the farmer, the sailor, the salesman, and the little housewife . . . to all people, great and small.

When you remember that there are so many places here that formerly meant weeks of travel by burro, that TACA now brings in hours and minutes . . . it becomes understandable why this lifeline has grown into Latin America's largest airline system.

Today TACA operates more than 50 fast, modern airplanes over 25,000 miles of magnificent skyway in fourteen Central and South American countries. Flavored by materials of choice, advised by technical experts from North America.

TACA is growing, too, as a lifeline of travel and trade and goodwill between our two continents.

TACA AIRWAYS AGENCY, Inc., 32 Biscayne Blvd., Miami, 15 West 30th St., New York . . . or your local travel agent.

TACA AIRWAYS *System*



TACA SERVES THE AMERICAS

Giant Jet Transports Planned by DeH. Firm

Lightweight jet planes in cruise at 615 mph at 49,000 ft in trans-Atlantic route.

Plans for a jet-propelled, 85-ton, 75-passenger airliner with a cruising speed of 615 mph at 49,000 ft. were revealed recently by Nage Frank B. Halford, Chairman and Technical Director, deHavilland Engine Co., Ltd.

Six of these giant craft, costing between \$1,350,000 and \$1,600,000 each, depending on the quantity built, could transport more trans-Atlantic passengers annually than the Queen Mary, yet operate at a cost of less than half that of the Douglas DC-4.

In trans-Atlantic operation, the airliners would carry 10,000 gallons of fuel, 68 passengers with baggage and 3,500 lbs. of mail or freight. They would make the westward flight in 7 hrs. 5 min. and the eastward flight in 6 hrs. 14 min., or about one-third the present flight schedules. The fare would be about \$24, or only two-thirds the existing fare.

Pointing out that the higher fuel consumption of the turbo-jet engine is more than offset by the high aircraft speeds obtainable, Halford ex-

plained plans for a unit developing approximately 3,100 horsepower at 49,000 ft. with a specific fuel consumption of only 0.18 lbs./hour/lb. thrust, about 35% lower than the best American design.

Four of these engines, costing about \$85,000 each, would be employed in the new airliner and, developing 15,000 hp. thrust each for takeoff, would permit takeoffs in about 4,000 ft. with maximum load. Success of the new engine is predicated on the development of a turbine inlet temperature of more than 1,800° F., considerably higher than those now in use in the U. S.

He cited the great advantages of high altitude to speed by explaining that although the airliner would travel at 615 mph at 49,000 ft. it would experience the drag that a speed of only 350 mph produced at sea level.

Executive Transports Are Sold for \$115,000

Deliveries of the Douglas DC-3C executive-type transport will begin early in July, the company has announced. Nine of the luxurious C-47 conversions have already been sold at \$115,000 each.

The aircraft is furnished in two standard interiors. One has four

seats, two on each side of the cabin, convertible to berths, and the other version has two. To the rear of the seats are upholstered, adjustable cases, conference table, writing desk and other facilities appropriate. Basic versions seat 15 passengers and contain a buffet.

Douglas is offering these transports with a new-aided guarantee covering for a market among large industrial corporations, the executives of which are thoroughly familiar with the DC-3 through its use as an executive. The aircraft company is keeping for its own use one of the first DC-3Cs.

Although other purchasers are not revealed by name, they include a manufacturing concern with several hundred dealers, a number of whom will be down each week to the home office for sales conferences, an oil company which will utilize the plane in exploration as well as sales activities, a food manufacturer with water-separated plants, a sportsman, a steel manufacturer, a newspaper chain.

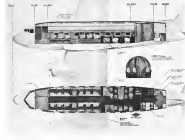
Lockheed Awarded First CAA Production Certificate

Lockheed Aircraft Corp., Burbank, Calif., recently was awarded the first CAA production certificate issued in the Sixth (West Coast) region since war's end. J. E. Ryser, Lockheed vice-president in charge of manufacturing, pointed out that two members of the company's inspection staff are now certified by CAA to pass on new Lockheed production planes of commercial types and issue documents for registration and evidence of the planes. The company inspection is subject to occasional spot-checks by CAA inspectors to see that high standards are maintained.

Johnson Plant Expands For Rocket Production

Johnson Aircraft, Inc., has begun work on a 100,000-square foot addition to its Fort Worth plant which, with other plants, is intended to boost current production up to 10 Rocket 10's a day. Company anticipates widespread purchase of materials and sub-assemblies.

To finance the expansion, president R. S. Johnson announced the offer of 5,000,000 shares of stock to the public at \$1 per share. Of the new capital, \$400,000 will be toward the plant addition, with the balance for subcontracting.



Douglas Executive Interiors. Artist rendering of the interior plans of the DC-3C executive-type transport to which Douglas Aircraft Co. is converting a number of C-47s. Another version has two, instead of four seats which are convertible to beds, with the extra space being taken by seats.

Pressure Cabin Tests Successful on "Tudor I"

First flight tests of cabin pressurization on the Avro Tudor I have been completed successfully. The system, first to be used in a British airliner, maintains 8,000 ft atmospheric pressure in the cabin at airplane altitudes of 35,000 ft.

Structure sealing is by sealing winged joints with air-cured seals around doors, emergency exits, etc. Differential pressure of 5.5 lb/sq. in. is maintained by Marshall XV blowers mounted on the two outboard engines.

Pressurized air is routed through two airway units. Cabin heating is provided by a 50,000 BTU kerosene heater. Air inlet to cabin is through the tailfin area of the passenger entry. Ventilating air includes a combination of fresh air and pressurized cabin air.

An excessive pressure leakage test on a mockup specimen resulted in compliance with an arbitrary maximum of 60 cu. ft./min. or 6.67 percent of the available compressor supply. Following this pressure test, routine structural tests were carried out on the mockup, thereby saving considerable time and money.

Twenty Tudor I's are scheduled for completion this year, the only order on the books for this ship.



"Tudor I" Cabin interior of the subsonic Tudor I DCAC will use in North Atlantic service. Air conditioning inlet louvers are near the floor in the chair armrests. Not shown are additional louvers in the side walls of each compartment. Outlets are slat around reflectors for the roof lights.



Pressure Tests on "Tudor I" Full test test facilities of the Avro Tudor I are shown before recent pressurization tests. A plan test of 1/2 in. steel, with aluminum windows, was placed between the fuselage and research engineers during the tests.

Bendix '45 Earnings Net \$7.31 Per Share

Settlement of Bendix Aviation Corp.'s 21,500 cancelled contracts involving \$1,104,900,000 is expected to be completed before the end of this month. Ernest H. French, retiring president, has reported in making public the company's financial statement for the fiscal year ending September, 1945.

Included in the 1945 net sales of \$440,318,523 were payments from settled contracts in the amount of \$83,915,555. Earnings in fiscal '45 were \$12,222,002, or \$5.90 a share of common stock. In addition, Bendix shows a special income credit of \$5,555,268 which was added to the earnings making the final figure equivalent to \$7.31 a share. In fiscal 1944, company earned \$7.22 a share.

Company's net was after deduction of \$24,408,488 for taxes; \$11,000,000 for reorganization; \$4,579,482 for depreciation and amortization; and \$5,568,281 for contingencies. The net income, before the special income credit, amounted to \$49 percent of net sales and other income, as against 1.58 percent in the preceding year. As of Sept. 30, working capital was \$72,069,353, a big up over '44's \$46,355,304.

Junior Prop Model Boosts Performance

Quality production of a new full-scale propeller especially designed for installation on twin engine biplanes or monoplanes aircraft was announced last week by Hamilton Standard Propellers

division of United Aircraft Corp.

A smaller version of the company's hydraulic propeller, the junior model is provided in diameters ranging from eight feet three inches to 19 feet, and is for use primarily on engines of from 600 hp to 950 hp. One of its best installations is on the Beech D-18 aircraft.

In tests with the Beech one of the new propeller's main advantages appeared to be in single-engine operation. With one propeller fully feathered the D-18 climbed 100 feet per minute faster, and 2,000 feet higher than when the same aircraft was equipped with usual constant speed propellers and one engine was inoperative.



Smaller Hydraulic: Hamilton Standard Propellers division of United Aircraft Corp. has put into quantity production the "baby" version of its widely-used hydraulic prop. It ranges in size from eight to ten feet in diameter.



New Protok-Plug Assures Greater Engine Protection

The new CECO Protok-Plug assures a new high standard of protection against the presence of moisture within aircraft engine cylinders. And it delivers this greater protection at a really low cost.

It has five new, improved features which increase its overall effectiveness and length of life...

The glass cap is encased in a glass chamber, completely to eliminate moisture penetration from outside... giving a clearer picture of moisture conditions inside the cylinder.

The glass is sealed in a metal base to strengthen the plug, and to give a tighter fit in the cylinder.

Standard size spark-plug wrenches fit the metal hex base to speed installation.

The brass cap fits tightly over the open end, keeping the Protok-Plug tightly sealed until it is placed in service.

The moisture filter replaces the paper strainer formerly used in the days of wartime shortages.

Write for full information on the new improved Protok-Plug to the address below.

CARBURETORS FUEL PUMPS PROTOK-PLUGS
CHANDLER-EVANS CORPORATION
WEST HARTFORD 1, CONNECTICUT, U. S. A.





your
place
in
the
sky

Taylorcraft



"BEST BUY IN THE SKY"

Whether you fly to save time, to get places fast in professional emergencies, or to cover your farm and reach work, to add days to your vacation time, or just for the pleasure of flying... you'll find your place in the sky with the new Taylorcraft... your personal plane.

Taylorcraft offers each pilotcraft — fast, smooth, reliable, good — slow, safe, low-speed — safe by its comprehensive seating — and a host of features you expect to find only in quality planes. Check features for features, price for price, and you'll agree with aviation experts that TAYLORCRAFT is the "Best Buy in the Sky."

Write to Mr. Smith

TAYLORCRAFT AVIATION • BELLINGHAM, WASH.
MAIL 2 LARGEST DISTRIBUTORS OF NEW BIRMINGHAM



MONOPLANE - World's Airplane
Behind the Light Plane
1625 lbs. for 100 mph. 1000 lbs. for 100 mph. 1000 lbs. for 100 mph. 1000 lbs. for 100 mph.

BIPLANE - 1935 Model
1000 lbs. for 100 mph. 1000 lbs. for 100 mph. 1000 lbs. for 100 mph. 1000 lbs. for 100 mph.

MONOPLANE - Light Plane
1000 lbs. for 100 mph. 1000 lbs. for 100 mph. 1000 lbs. for 100 mph. 1000 lbs. for 100 mph.

BIPLANE - 1935 Model
1000 lbs. for 100 mph. 1000 lbs. for 100 mph. 1000 lbs. for 100 mph. 1000 lbs. for 100 mph.

FINANCIAL

Airline Losses Cushioned By U. S. Income Tax Credits

First quarter statements show effects of lower fares, increasing military personnel, equipment delivery delays and other recession factors.

Airline losses are being cushioned by federal income tax credits in the form of carry-back provisions. This is revealed by the first quarter reports currently being released by a number of carriers.

The accompanying table shows 1945 first quarter results as reported and as adjusted, showing effect to various credits. *Conservative Eastern* for the first quarter of 1945 further highlights the sharp drop in profits peculiar to most of the lines.

American's net profit of \$1,352,371 for the first three months of 1945 was reduced by an adjusted net loss of \$1,000,000 greater amount for the current first quarter. The reported deficit for the first quarter of this year was \$447,548. To this could be added \$300,000 representing the federal income tax credit.

Charge Refunds Delay—The company excluded from current results \$400,100 representing the net amount charged to the reserve for transition to peacetime operations. This charge reflects the cost resulting in the delays in releasing personnel from military contract to commercial operations, and from releasing personnel returning to the company from military service. America, as of December 31, 1945, showed \$2,734,000 in this reserve account, all contributed from earnings of previous years.

Accordingly, American's net adjusted deficit for the first three months of 1945 may be said to have approximated \$1,078,238. This is equivalent to a net loss of about 21 cents a share on the 5,100,000 shares now outstanding after the first dividend split. This compares with a profit of about 29 cents a share on the same capitalization for the first quarter of 1945.

Eastern in the Black—Eastern not only returned in the black but showed a substantial increase in its current earnings over 1945 first quarter results. Net earnings of

\$745,705 for the current first quarter represent a 35 percent increase over the same period a year ago.

Going back to the recent January-October 1944 earnings for the first three months of 1944 were equivalent to about 31 cents a share on the approximately 2,400,000 shares now outstanding. This compares to 19 cents a share, on the same basis, for the 1945 first quarter.

Normally, Eastern's first quarter is its most profitable period. Assuming, however, that similar results will prevail during 1946, Eastern's new common stock is selling at about 33 cents projected earnings, a liberal measure in previous "boom" times but not necessarily out of harmony with present market trends.

Stock Dividend—The directors of Eastern have placed the new stock on a 50 cent annual dividend basis. This is equivalent to doubling the \$1.00 rate on the old stock. A semi-annual dividend of 25 cents a share is payable June 30 to holders of record June 7.

PCA shows the largest tax adjusted loss of all of the reporting carriers. Its reported deficit for the 1945 first quarter is increased from \$630,325 to \$1,023,120 without the tax carry-back provision. This compared to a normal profit of \$71,128 for the comparable period a year ago.

The effect of debt in the capital structure, under non-profitable operations is also highlighted in the

PCA statement. A total of \$27,265 (included in the reported loss) reflects interest expense on the \$10,000,000 3 1/2 percent debenture issue. Under profitable circumstances, the presence of debt in the capitalization reduces the earnings leverage on the capital stock.

Dividends Unlikely—An almost obscure footnote in the PCA statement leads to the conclusion that dividends on the common stock are unlikely this year and may remain so constant through the foreseeable future. Attention is directed to the indication covering the company's debentures, that earned surplus as of December 31, 1944 or \$1,023,916 is not available for the acquisition of the company's stock nor for the payment of dividends.

National Air Lines, Inc. reported a net loss of \$206,349 for the same months to March 31, 1945 compared to net income of \$35,144 for the similar period a year ago. Comparative figures for the first quarter only are not available.

TWA Loss Mitigates—TWA, directly among the last to issue its financial reports, is estimated to have lost about \$1,000,000 during the first quarter of this year compared to a net profit of \$504,064 for the first three months of 1945.

Losses have been reduced by the "carry-back" provision, where deficit operations have prevailed. In the case of a profitable carrier, Eastern Air Lines, the absence of the excess profits tax impact is primarily responsible for the substantial increase in residual net earnings.

It is a conservative measure that the airline industry's earnings for 1945 will be far below those for 1945. The reasons include preparation for expanded operations, training programs for augmented personnel and accelerated amortization of newly acquired facilities. Delays in delivery of additional planes have been evident as personnel were available and being paid but not shipped. Fare reductions, in September, 1945, to a level of 4 1/2 cents per passenger mile accumulated the trend of declining earnings.

COMPARATIVE AIRLINE NET EARNINGS First Quarter 1945

Airline	As Reported	As Adjusted*	1944
American	\$1,352,371	\$452,371	\$1,352,371
Eastern	\$745,705	\$745,705	\$745,705
PCA	(\$630,325)	(\$1,023,120)	(\$630,325)
TWA	(\$206,349)	(\$206,349)	(\$206,349)

*For Tax credits only

SPECIAL AIR SERVICES

CHARTER NON-SCHEDULED INTRASTATE

Waterman Airlines Expands Services to Caribbean Area

Orders new Douglas DC-4 and 3 DC-3s for increased intrastate and non-scheduled cargo flights.

Undered by the CA's Latin American domain which denied it regular air routes, Waterman Airlines, subsidiary of Waterman Steamship Corp., Mobile, Ala., is continuing plans to expand its intrastate scheduled service in Alabama with new aircraft, and is expected to offer non-scheduled accommodations throughout the Caribbean area.

New operating passenger and cargo service to six Alabama cities, company has signed a contract with Douglas Aircraft Co. for early August delivery of three 34-passenger DC-3's and June delivery of a new 44-passenger DC-4 (the latter to be used for non-scheduled passenger

service). Passenger rates have been adjusted to equal the fares of the scheduled service.

Inaugurated Cargo Flights—Waterman inaugurated cargo and survey flights in Alabama last November and scheduled passenger service March 11, 1946. Present passenger schedules, placed in effect this month, include two round trips daily from Mobile-Birmingham, one from Mobile-Shreveport and one over the entire route from Mobile to Muscle Shoals.

On cargo flights, Waterman has carried such diversified products as shrimp, fish, apples, gasoline, baby clothes, radio parts, phonograph records and tires.

Asks Direct Routes, Not Feeder Systems

Tableaux Airlines' New York network of high speed services adds Tai-Cien.

High speed air service direct to major cities, with a minimum of stops en route, and not feeder lines, is the answer to demands of commuters in heavily populated areas such as New York State, in the opinion of C. S. Robinson, founder of Robinson Airlines.

His intrastate routes have been augmented to include Buffalo-Tai-Cien (Buffalo-Town-Johnson City-Endicott). Flying time is 55 minutes in either of the two new Robinson Beechcraft. Two round trips are flown each day.

Mr. Robinson says his company, established in April 1945 out of Ithaca, N. Y., has established the need and economical practicability of a regional airline offering the same high quality service as that of the major airlines.

Since acquiring its new planes in April, the line has been carrying about 1200 passengers a month on its Ithaca-New York and Ithaca-Buffalo runs. The newly served area, with over 224,000 population, should generate more than 2500 passengers a month, based on business out of Ithaca, with 30,000 population.

"This proves that an airline designed to be an integral part of the economic structure of a relatively isolated region can be financially sound," Robinson claims. "The central New York region vitally needs fast class air transportation. Ithaca, for example, is about eight hours from New York by rail, 35 minutes by air. Washington is over 5½ hours to Buffalo."

OVER 2,000,000 MILES OF FLYING
behind Your New PIPER CUB



Illustration: Bob Post, Knoxville, Tenn.

TAKE off in a Piper Cub Special like the one above—an up-to-the-minute personalized version of the Cub in which most of today's pilots won their wings. Not a big plane but big enough to carry goods above the mauling battle fields of Sicily. Not a fast plane but fast enough to leave your friends far behind as the car-crammed roads to By-the-Sea. Not a dream plane fresh from a drawing board but a plane with fifteen years of light-plane experience built into it—worth over 2,000,000 miles of flying behind it!

You will find that your Piper Cub takes off quickly with a short run (less than the average city block), gets you there with less gas and oil than your car. It lands safely at little more than your car's city driving speed. It is easy to fly... many people are ready to solo after a few hours' instruction. Many production methods enable Piper to bring you a plane that costs less than any on the market—only \$605 down with easy payments. With no purchase, you get a free flight course. Small wonder that Piper leads in sales with a record of more light planes than all others combined.

See the new Piper Cub airplanes at your dealer's. Ask him for a free flight demonstration or one of these planes that keep on selling faster to the Piper man.

Only
\$605
down

LOOK TO THE LEADER

FOR GOOD SAFE PLANES YOU CAN AFFORD TO BUY AND FLY

PIPER



HERE ARE 3 FINE
AVIATION BOOKS FOR You!

1. *Piper Cub Book*. Read, read, read! This book tells you everything you need to know about the Cub, its operation, its maintenance, its performance, its safety, its history, its future. It's a must for every Piper Cub owner.

2. *How to Fly a Cub*. Takes you on a special flying lesson with 15 easy-to-learn phases and 15 complete, easy-to-understand lessons.

3. *What Your New Cub Can Do*. Will help you in your continuing flight instruction. Landing, take-off, taxiing, etc.

Get these books from your Piper Cub Dealer now. Or, if you prefer, send us 10¢ per book in 75¢ for all three. Use stamps or cash. Specify which books you desire. Write Dept. 426.

PIPER AIRCRAFT CORPORATION
1001 KAYVILLE, PENNA., U.S.A.
In Canada: King Aircraft Ltd., Montreal



CARGO GROUP CHANGES NAME

The name Air Corps Institute replaces "Air Corps Associates" for the recently-chartered West Coast associates of non-scheduled air carriers. Presently, left to right: Gerald Lawrence K. Perry, chairman, Howard Payne, president, and Melville L. King, secretary-treasurer. Standing, Everett G. Valdes, general manager, National Air Cargo Corp., operating from Los Angeles Airport, and L. M. Krug, owner, Modern Flying Service, operating from Grand Central Airport, Glendale, Cal. Intrastate associations are at Long Beach (Cal.) Municipal Airport (Aviation News 4/19/46).

"Hitch Up My Super Power!"



NEW Mobilgas AIRCRAFT

GIVES FLYING HORSEPOWER

Now both commercial and private plane operators can get war-wound super power plus!

It's *Flying Horsepower*—from a great new Mobilgas Aircraft!

Since war's end new improvements have been added to this unusual new aviation gasoline that boost its performance and economy standards still higher—

now even greater benefits to all plane operators!

Get New Mobilgas Aircraft for Flying Horsepower! It's the result of the world's greatest catalytic cracking progress!

MOBILGAS-AIRCRAFT OIL CO., INC.
and Effective Midget Petroleum Co.,
Largest Refiners Corporation of Calif.



Biggest Contract Cargo Line Flying to Tokyo and Shanghai

Pacific Overseas Airlines, reorganized by former staff of Constairway, operates for ATC and UNRRA to Far East.

The highly successful wartime Constairway, Trans-Pacific contract air carrier, has been revived under employee ownership as Pacific Overseas Airlines. It is now:

- ▶ Eight round trips a week between the U. S. and Tokyo, under contract to Army Air Transport Command.
- ▶ Four additional trips a week between the west coast and Hawaii for ATC.
- ▶ Regular commercial schedules from the company's Ontario, Cal., base to Shanghai, for UNRRA.

The first UNRRA flight, believed to be the first commercial all-cargo shipment to China from this country, carried over \$100,000 worth of surplus, vaccines, and other surgical supplies, weighing 14,000-lbs.

Travels from between California and China is 24 days, on a route via John Rodgers Field, Hawaii; Johnston Island; Kwajalein, Guam; Okinawa to Shanghai. Plans are to continue use of the Central Pacific route, but an Alaskan shortcut is under study.

On its ATC operations alone, 37 Army C-54's are used and 662,000 miles are flown each month. Currently POA flies more than a trip around the world each day on all schedules. It claims to be the largest operator in the Pacific. Officials say they have more business than they can handle, will need more C-54's.

The fact that Chet Brown has been named vice-president in charge of Alaskan operations hints at other future plans.

Officers of the employee-owned company, whose personnel now lists over 500 (include J. L. Brett, board chairman; J. Edwin Jones, president; Lee J. Dierker, executive vice-president; D. B. Kinsford, vice-president-in-charge; Quentin Cudney, vice-president-operations; Eddie Piersel, formerly publicity director of Constairway and more recently with American Airlines, has become director of public relations.

Tigers Survey Hawaii Air Freight Business

16 new contracts add perches, looking more, check us cargo, monthly used 75 tons

National Skyway Freight Corp. (Flying Tigers) is making a survey of potential California-Hawaii air freight business.

Company President Robert Powell states, however, that Honolulu newspaper reports that the Tigers survey is being made to the 50 loads are 111 founded. He says the survey merely is part of the company's investigation of many potential routes and marketing areas.

Enthusiastic over NRP's business prospects, despite a previous airline venture which failed (Acronia Airlines in Mexico), are the Southern California industrial leaders of Pomeroy's operation. Allan Chant, Los Angeles wartime economic manufacturer, S. B. Hines, president, Signal Oil Company, Thomas J. Sullivan, general, Howard Radio Co., and James Davidson, president, Great Western Steel Co. Said Chant, reputed to be the largest stockholder in the Flying Tiger line: "It is natural that Bob Pomeroy should be considering expansion. Today 60 percent of the cargo flown by several hundred scheduled companies now in existence is flown by National Skyway Freight."

In April, NRP flew 182,366 miles 109,000 ton miles, and 209,355 passenger miles, and 75.9 tons. Cargo included flowers, magazines, leather, machinery, furniture, guns, bulk milk, beverage balloons, pencils, candy, corpses, nylon hosiery.

Company has announced 16 "national" new contract flights and charter for four states in carry services commenced from west to east coast. One can for four plane loads of gardeners from San Francisco east. Another is for 12 planes of flowers for California Flower Shippers at Los Angeles to the east. Two loads of lumber used will be flown from the Midwest to New York, where it must be in use 15 hours after dispatching. Passengers will be carried from coast points to the Laramie-Corral flight. New charter probably will be flown to Miami, for shipment to Puerto Rico.

Executive Aircraft Owners Organize

The remarkable growth of business and industrial corporations which are purchasing private executive and transport aircraft is one of the brightest spots in the nation's aircraft manufacturing picture.

Hundreds of companies are looking to the air, or plan to do so when new planes are available. Soon already have purchased surplus single- and twin-engine craft to transport executives, salesmen, clients or products, and are finding that important savings are possible in time and cost with added business available because of the economies over competitors who use slower transportation.

Many other corporations which do not anticipate actual purchase and maintenance of their own planes



Non-Scheduled Line Crosses Pacific: Photo shows (left) Leo J. Dierker, executive vice-president, loading goods to Carl Seitz (right) another vice-president and captain of the inaugural non-scheduled trans-Pacific flight before the first C-54 (parked at right) took off from Ontario, Cal.



The Stratocruiser's broad-based wings of the Boeing Stratocruiser

Smoothest ride in the world

Aboard a Boeing Stratocruiser, passengers will experience a new kind of ride—comparatively smoother than is any other transportation of any kind—on any other airplane.

They can relax and rest completely—no vibrations in the smoothly appointed lounge—write letters or read—all the while feet securely massaged from air in any chair at leisure. There are excellent reasons for this amazingly smooth ride. The use of the airplane—the unique Boeing wing and other features of aerodynamic

design—let the smooth-riding stratosphere which it can fly—and its speed of more than 3,000 miles per hour—allow it to level, select smooth flight. Even air bumps that would be severe in other transports are reduced to a minimum by the Stratocruiser.

The same Boeing engineering leadership that produced the great B-29 Flying Fortress and the great B-47 Supersonic Bomber both guarantee and guarantee smoothness in the Stratocruiser. Boeing Airplane Company, Seattle, Washington, Wichita, Kansas



BOEING
STRATOCRUISER

The Stratocruiser's exceptional speed, comfort and reliability will soon be available on these favored

leading airlines—Pan American World Airways, British International Airlines, Northwest Airlines.

American Overseas Airlines—for which Boeing is building fleets of these super transports

are preparing to contract with a rising new group of business men in aviation, those who maintain high speed, smartly equipped transports, and a staff of expert pilots, ready on a few hours' notice to fly anywhere on assignment.

Representatives of companies who own their own planes met at the new Wings Club quarters in the Baltimore Hotel, New York City, last week at the invitation of Sydney Nesbitt, president and general manager of Atlantic Aviation Corp., to form a Professional Committee for Industrial Flying. Nesbitt is area Beach distributor.

"The committee will prepare a program aimed at placing industrial flying on the same operational level with airline and contract services," Nesbitt said. He pointed out that corporations demand the highest standards in equipment, maintenance and pilot experience. Further, to be fully efficient, business and industrial flying must be recognized by the various regulatory bodies as an important segment of the air world, he said.

"The specific need for progressive air traffic procedures was discussed, and a survey will outline how corporations can best use their own flying services."

Other Operators

► **Mayfield Airlines**, Washington National Airport, reports a book business on its Constellation passenger flights between Baltimore-Easton, Md., and Washington-Easton, with numerous extra flights. Also, two flights daily have been operating from Boston to Philadelphia, Del., with known base areas which

Argentine Boies

Three-Air's new Douglas DC-4s which were used for Mexico-New York non-scheduled flights at the height of the Florida season have been taken back to their owner, Alberto Dabene, Argentine airline owner, from whom the ships were originally leased.

Dabene's original plans were to use the big transports for his own airlines, but since he is Uruguayan, he found the Argentine government would confiscate his property at the order of Peru, present head of the government.

The DC-4s are now being used by Pan American-Grace Airways, in Peru, for pilot training.

Minco Farm Airline

An air transport company organized at \$500,000 has been organized by a group of Canadian mining firms operating properties at Yellowknife on Great Slave Lake in Northwest Territories.

The new operator, Minco Engineering Corp., will serve all of the island. It has a converted C-47, a delivered Fox Moh and has ordered two Brewster Norsemen for both operations. BCAF veterans are pilots.

is expected to draw heavy business for the company again next summer.

Plans for vacation season expenses include arrangements already completed with a cab operator to connect with planes at Resolu, to take passengers 10 miles to Great Slave Lake. The line will be operated by bus. The line has four 4-passenger Constellation and three six-passenger Norsemen which will be modified to carry another passenger each.

► **Boeing Air Freight, Inc.**, Baltimore Municipal Airport (Aviation News, Apr. 1), agreed service with a 6,000-lb cargo of cloth from Providence, R. I., to Los Angeles, returning with beer for Chicago, and other freight from Chicago to Newark and Baltimore. L. W. Ryan, vice-president and operations manager, and 16 men are converting four C-47s, and the new way in to the market for one three more C-47s. Constellation costs the line \$1,800 to \$4,900 per plane, which is not.

► **East Coast Air Express**, Fort Pierce, Fla., has been incorporated in Florida as a public air carrier for air carriers, established at \$500,000 per common share. Principal officers are John Stodd of Boston, Pa., and E. L. Taylor of Fort Pierce.

► **Boeing Air Freight, Inc.**, Phoenix (Aviation News, April 1 and 15), is converting a second C-47 to its own shape at a cost of \$20,000, according to a report to Civil Aeronautics Board, and may acquire a third Douglas C-47. The line had the three Lockheed Stratus to be delivered at \$10,000 each in 1947 will direct the Douglas for cargo, airfreight, and peak passenger use.

► **Boeing Air Freight, Inc.**, (Aviation News, March 15) has completed its first coast-to-coast flight carrying dresses from Salt Lake City, and plastics, to Los Angeles, and returning with oranges and cut flowers to Dallas and Chi-

cago. Phase No. 2 is under consideration. Line is operating independently from Boeing (Pa.) Municipal Airport, until facilities are ready at Southwest Airport, Philadelphia.

Rejected by Board, Challenger Goes On

Missouri operations in Utah will continue seven weekly flights to Phoenix, and add two other stops.

Although turned down by the Civil Aeronautics Board for scheduled interstate flights in the Rocky Mountain feeder case, Challenger Airlines, Inc., Salt Lake City, expects to continue scheduled interstate service and increase its non-scheduled flights.

Challenger operates to Phoenix, Ariz., from Salt Lake City, about three times a week. One round trip day at most to Utah points. Additional flights are proposed to serve Grand Canyon, Ariz., and Bryce Canyon, Utah, as soon as planes are available. Boeing D18s equipment used, carrying two pilots and eight passengers. New Boeing Fokker, Model 417, are contemplated in future plans.

► **Get Repeat Business**—Passenger traffic has developed steadily and a large volume of repeat requests are being received from business concerns who are a reliable source of repeat business and provide any dependency on large tourist influx, the company reports.

"It is our intention to continue the Salt Lake-Phoenix run until the CAB act to terminate it, it is our positive contention that ample traffic exists between Salt Lake and Phoenix to warrant at least one round trip daily."

► **Will Fly for Certificate**—The company will file for non-scheduled certification under the grandfather clause of the Public Law of the Civil Air Regulations. All operations are daylight contact, but only one trip was canceled by weather from March 1 through May 15.

On Monday, Wednesday and Friday a round trip is made between Salt Lake City and St. George, 375 miles apart (one way fare \$4.75), via Provo, Delta, Cedar City. On Tuesday, Thursday and Saturday a round trip is flown over the 254-mile Salt Lake City route via Mt. Pleasant, Miami-Rubicon, Berfield, and Beaver. One-way fare between Salt Lake City and Phoenix is \$39.95 not including the tax.

TRANSPORT

Pacific Feederlines Extended By CAB Veto of Big Carriers

Empire Air Lines, Southwest Airways, and West Coast Lines, Inc. get new routes for short haul operations; additional service ordered for trucklines.

Attempts by existing trucklines to engage in feeder operations failed for the third time this year in California's West Coast region, when the Federal Aviation Administration (FAA) certified three independent local operators for extensive short haul service in California, Oregon, Washington and Idaho.

The new carriers, the four, fifth and sixth area feederlines to be granted three-year certificates in 1948 are Empire Air Lines (Seattle, Idaho), Southwest Airways Co. (Beverly Hills, Calif.) and West Coast Airlines, Inc. (Seattle). The seventh area feederline, the certificate of American Airlines (Western Air Lines and United Air Lines) to permit additional service in the Pacific Coast region.

Trucklines Ignored.—Reaffirming principles expressed in the Rocky Mountains and Florida cases, CAB said it did not believe that feeder service, in its present developmental and experimental stage, should be restricted to a narrow and temporary objective area in providing long-haul truckline service.

In view of the limited traffic potential of the smaller cities as a national effort will be required to develop business traffic, the Board stated it added that "greater effort and expense of managerial capacity may be expected from an independent local operator whose contribution to the air transportation business will be dependent upon successful development of traffic and upon economical operations."

Outstanding in the decision was the Board's enthusiasm for the extended passenger-bus operations proposed by Southwest and West Coast on routes serving small communities where the traffic potential is limited. In many instances, CAB observed, no passenger will want to replace or displace at a particular city on a particular flight. Here the Board saw considerable advantage in the ability of the

operator to pick up mail and express without landing.

Hope For Experimentation.—CAB expressed hope that the smallest experimental will be conducted in combination passenger-pickup operations by the feeder lines established in the Pacific Coast area.

While an combination plan has not been certified, the new trucking, Borch DIT (Aviation News, May 13) is now being tested for this type operation. The Borchcraft will carry four passengers and more with pickup equipment and eight passengers if the equipment is removed.

CAB allowed the policy established in the Rocky Mountains and Florida cases in its selection of established aviation companies with experience and to permit the newly-certified Pacific Coast routes.

Empire Air Lines—Empire Air



START TACA TOUR:

Two TACA officials, Julius C. Halman, president (center), and Benjamin F. Pepper, Chairman of the Board (right), were greeted by Gen. Thomas G. Herd, executive vice-president, as they arrived at Miami recently to run an inspection tour over a large part of TACA's 23,000-mile system in Central and South America and the Caribbean.

Lines is headed by Albert L. Zanerly, who has conducted fixed base operations in Idaho since 1934. Zanerly engaged in pilot training during the war and has operated a scheduled interstate passenger service in Idaho since June, 1946.

Empire's newly-certified routes run between Boise Falls and Boise via Portland, Twin Falls and other points, and between Boise and Spokane, Wash., via Ontario, Baker, La Grande, and Pendleton, Ore., Walla Walla, Wash., Lewiston-Clarkston, Pullman-Moscow and Coeur d'Alene, Idaho. The carrier will have between 700 and 750 route miles.

Southwest Airways Co. was incorporated in 1941 and operated flight training schools and a maintenance base for the Army Air Service Command during the war. It also flew Army cargo in the Pacific Coast area. Officers include John H. Connolly, president and secretary, Leslie Rayburn, chairman of the board, and James G. Ray, vice-president.

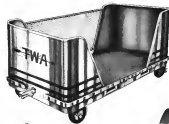
Authorized routes are: Los Angeles-San Francisco via Oakland-Victoria, Santa Barbara, Santa Monica, San Juan Capistrano, Monterey, Santa Cruz and San Jose; Fresno-Medford, Ore., via Valico, Sacramento, Marysville, Redding and other points, and San Francisco-Medford via Santa Rosa, Ukiah, Fort Bragg and Eureka.

West Coast Airlines—West Coast Airlines was incorporated in the State of Washington in 1941. Its president, Nick Ser, formerly operated Alaska Southern Airways, a charter service and later a scheduled carrier based at Juneau. Other officers include Gilbert R. Cook, vice-president and business manager, and Haveland Mendenhall, executive vice-president in charge of operations.

Routes certified for West Coast Airlines include: Portland, Ore., via Roseburg, Eugene and other points, Portland-Seattle via Kelso, Clatskanie, Olympia and Tacoma, Wash., Portland-Seattle via Kelso, Astoria, Ore., Aberdeen-Houston, Wash., via Port Townsend, and Seattle-Bellingham, Wash., via Everett, Mt. Vernon and Astoria.

Although the Board criticized these new feederlines instead of the two recommended by the committees in the case, Member John Lee, in a partially dissenting opinion, said a fourth service should have been authorized. He favored a certificate for Nevada-Pacific Airlines to operate on the Nevada plateau and between Reno and San Francisco.

Check this Equipment... Now Available!



✓ BAGGAGE CART Universal Type

Specifications: 7' x 6', highly polished aluminum knob, plywood lined for extra strength. Both sides are demountable, made of expanded metal. Designed for use with fork lift trucks. Has removable expansion bars and lift zero pressure tires. Standard lock operated track locks and manual brakes are standard equipment. Chrome bumper for protection. Capacity, 1200 lbs.

EQUIPMENT ENGINEER

Excludes include complete plant equipment and personnel for the following of light and heavy metal work in any of our products. Hammond is a manufacturer of your product or special handling equipment and will furnish quotation for volume production.



✓ VARI-STAND For Passenger Loading and Unloading. (DC-4, DC-6, Martin 202 and Constellation.)

Specifications: Base—oil steel. Hydraulic Lift with self-locking safety feature—has power and clutch or any height. Features—Aluminum highly polished. Head Masts—2" aluminum tubing. Treads and Ramps—Gladiolux ALTRIM skid-proof—choice of 5 colors. Track Locks—Bosch T-40—manually operated. Tires—Zero pressure or pneumatic, optional. Special Skid wheels (wheels) regardless of stand angle.

Adaptable for many maintenance purposes. Engineered & Manufactured only by HAMMOND
WRITE FOR THE "PACIFIC PLAN"—Price quoted on request



HAMMOND MANUFACTURING CORPORATION

(Formerly Pacific Fabricating Company)

AT OGDEN AND SALT LAKE AVENUES, HUNTINGTON PARK, CALIFORNIA



WOMEN'S FIRM. "Anson," vice president, says, nearly made first step here when he called in Washington about a joint 4-engine Capital Airlines after a round trip from Washington. He was presented to the President by the Washington Chapter of Commerce.



KEEPING FACE WITH THE PUBLIC. OFFICIALS OF AIR TRAVEL. Capital Airlines recently asked for 10 million passengers and to now sell on its way to the 4-million mark. It took 14 years to pass the 10 million mark. 4 years to the second 10 million, but now 14 months to the third.



STANDING IN LINE FOR NY. FOREST. Not here just Capital Airlines. Hereafter the following is the company at New York. One of these 1936 girls that got up to a showstopper by Capital.



WING WING WING. F.D. 5, and C. Budd Hays, president of Capital Airlines, participate in routine connecting the late Andrew Roosevelt's Military Flight to Columbus in his latest DC-4. This plane is one of the eight joint 4 engine Capital's in the very expanded Capital fleet.

Feeder to Use DC-3s

West Coast Air Lines, Seattle, newly-constituted feeder, will begin its first period operations before Sept. 1, according to Gilbert H. Cook, vice president and Western manager. The carrier expects to use DC-3s to provide bi-weekly service on its Portland-Washington and Oregon routes which were discontinued in the West Coast area case.

Occident also wanted to extend Occident's routes north to Salt Lake City and west to Seattle, Tacoma and Portland.

More Antitrust—Antitrust suits to clearing carriers in the West Coast decision are:

United—AM 3 certificate awarded to include The Pacific, Co., and Trans Pacific, made an intermediate point, to connect direct service between Portland, Ore., and Seattle and to permit direct service between Seattle and Tacoma. AM 12 certificate awarded to include Pacific and Western, Cal., and Alaska Pacific near Seattle, Ore. An intermediate point and Long Beach, Cal., to a terminal point with Los Angeles.

Western—AM 11 certificate awarded to include Occident as a replacement with the frequency.

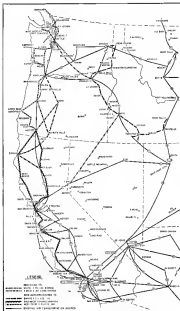
Antitrust—AM 1 certificate awarded to remove the restriction, permitting incorporation of local passenger between San Diego and Los Angeles and to provide 1937 San Diego shall be served only in higher scheduling or increasing east of La Brea.

Peru Grants Permits For New Air Services

LIMA (AP)—The Peruvian Ministry of Aeronautics has granted permits for several airlines, including one newly formed Peruvian airline, to operate within Peru. Panair do Brasil, subsidiary of Pan American Airways, is to fly from Brazil to Iquitos, on the headwaters of the Amazon.

Aerovias Pinares Internacionales, a new line created with local capital, was permitted to establish service in Peru and outside. In addition to applying for a permit as Peruvian International Airways, the company plans service between Lima, Panama, New Orleans, and New York and Montreal.

The Peruvian Government's announcement also mentioned a favorable decision to be forthcoming shortly on TACA's request to fly into Peru, connecting with its own lines in Colombia and Brazil. The permit will mark the first time TACA has been allowed to fly on the west coast of South America.



New West Coast Operators Confirmed: CAA's decision on the West Coast case overruled these new carriers, largest number in any of the three area route cases yet decided. Map shows their routes and additions to existing systems of United and Western.

Use Black Light

Northwest Airlines is using "black light" for the instrument panels of the DC-4's it has put into transcontinental service. The light is fluorescent with a blue filter, giving a ray scattering on the ultra violet.

The beam is invisible, but throws an instrument panel, activated when on they glow in the darkness, as though beams tested. Instruments are being worked on for the 15 to 100-watt Boeing Stratocruiser line expects to put on in January.

Co-ordinated Air Effort Meets Rail Needs in 48 Hour Crisis

ATA, Army, Navy and non-scheduled carriers pool resources to move mail, passengers, cargo with outstanding success in national emergency.

By BLAINE STUBBSFIELD

The Nation's first condition of all transport aircraft, to assist the rail strike emergency, was pronounced an outstanding success last week by officials of Army, Navy, Air Transport Association, and Office of Defense Transportation, which headed the 48-hour public-earner effort.

With the remote possibility that aviation might be called upon to team with highway and water transport to meet a second rail emergency due to the coal strike, officials said an emergency transport coordinating pattern had been set for any future need.

Biggest surprise under GDT's air mobilization "Order 84" was a few empty seats on scheduled airlines. Many persons, with and without reservations, interpreted first news flashes to mean that procedures were already on, and they didn't try to space. Some feared if they left home they couldn't get back, and others couldn't get through the telephone jam to ticket offices.

Army had 1,000 Planes—The Army placed about 1,000 transport planes, C-47's and larger, at the disposal of the Air Transport Command, the Navy's preliminary re-

port indicated it had nearly 200 planes available, mostly B-47 and B-50, the airlines, about 600 four-scheduled operations, variously estimated between 500 to 700 firms, had a fleet numerously interchangeable in planes of all descriptions. Civil Air Patrol outlined 10,000 senior members to stand by with their small planes for special missions.

Reports were beginning to come in from the airlines, and from the Army and Navy, as troops flew, animals and type of cargo carried, but the complete mobilization could not be ready for several days. The Navy said it flew 12,000 pounds of mail out of New York southeast, and some eastward from the Pacific Coast.

Post Office Exchange—The Post Office took no action except to put an embargo on all but first class mail, which went on airline and military planes at 1:00 p.m. Friday. The 21-hour backlog accumulated up to 6:00 p.m. Saturday, was being rapidly cleared up. Within two or three days, had the rail shut-down continued, there would have been practically nothing but mail and emergency cargo on any surface.

The Army's Air Transport Command fleet of 1,000 planes included 600 from regular ATC sources, 400 non-route planes from various air bases, among them were borrowed from Troop Carrier Command, and 200 from miscellaneous sources. ATC pledged to devote to the civil emergency all space not needed for any military need.

Army and Navy stopped straggled air operations on all their personnel, who could fly only by special permission. A "cease operations" order went to all AAF bases concerning training and other non-emergency flying. Sale of aviation gasoline to civilian planes was discontinued. Fuel would have been a serious shortage within a few days. It would have been flown in distress if necessary.

No Passenger Jam—ATC was slightly damaged by the emergency and had its handling would be cleared up by middle of last week. Like the Navy, ATC carried some mail, but because no passenger jam developed, the airlines carried most of it. One airline president called Robert Hunspeck, director of air transport with GDT, and asked that he be given more mail to the military wouldn't get it.

Lt. Gen. Harold L. George, ATC commander, said safety measures were increased, and that no reduced because of inexperienced personnel pressed into service. Normal maintenance loads were not increased by the same means. Maintenance was pushed to the limit.

The airlines received no extra airplanes for the emergency because they didn't enough personnel to handle any more. PCA said they could not add to hours-per-day on their planes. United said they ran at many extra trips and extra service as possible, and down some cargo in cabins, and made frequent fuel stops to increase load capacity.

United Set Record—United between they set a two-day record by flying 16,000 passengers and about 700 tons of cargo. Passenger traffic was up about 10% over the average for previous three Fridays and Saturdays; cargo up 25%, mail 130%.

GDT, in charge of the emergency by Presidential order, issued a series of orders mobilizing all forms of transport, including aviation under Order 86. Robert Hunspeck, ATA vice-president, was appointed Director of Air Transportation under GDT, with Col. W. B. Schermer, assistant chief of staff with ATC, as a member of his policy committee. Hunspeck held AVIA808

The favorite pin-ups of western flyers

Two great products of petroleum research...

CHEVRON AVIATION GASOLINE

RPM AVIATION OIL

From the airlines, many private flyers have learned the desirability of sticking to one kind of fuel. They find they get to know just what to expect of it, how it makes their engines react under all flight conditions.

That's why this map makes Chevron Aviation Gasoline a big favorite with pilots.

Notice how the pins (representing Standard Airport Dealers) blanket the West. Wherever you fly, you are never more than a few minutes from Chevron Aviation Gasoline.

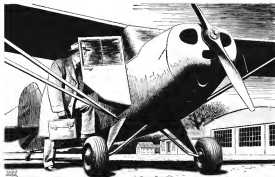
As a matter of fact, more airports in the West handle Standard of California aviation products than those of all other companies combined. It's good evidence that flyers find Chevron Aviation Gasoline is not only easy to get—but it's mighty good to use, too.

ANOTHER CONVENIENCE for Western flyers—Chevron National Credit Cards...good throughout the United States and Canada. West Standard of California, 215 Bank Street, Room 1010, San Francisco, California, or ask the Standard Airport Dealer at your field for application blank. STANDARD OF CALIFORNIA.



NOSE HANGAR FOR BIG PLANES

The 500,000 TWA nose hangar being built at Los Angeles airport establishes a new major aviation trend. As rates of military increases, there will be a definite departure from fuel-shelter hangars. This one, due to be ready for use by October, will shelter the forward sections of three Constellation or four DC-4's. It will be 245 ft long by 25 ft wide, with catwalks and maintenance shops on the first floor and operations offices on the second floor. It is reasonable that if transports are designed to exceed the Boeing Stearman and Lockheed Constellation in size, hangar housing will be abandoned for suitable shelters covering only the portions of the aircraft undergoing aerial maintenance work.



Delco-Remy
Aircraft Electrical Equipment

Where is the man who spins the prop?

With the availability of Delco-Remy electrical equipment on popular makes of light planes, the delay and inconvenience of finding someone to spin the prop are things of the past. Sure, safe electric starting is now within arm's reach as you sit in the pilot's seat, ready to crank your engine and send you on your way. Lightweight, compact and thoroughly dependable, Delco-Remy electrical equipment brings new convenience at take-off, insures ample generator current during flight to recharge the battery and operate lights, radio and accessories.

ELECTRIC STARTING FOR CONVENIENCE • ELECTRIC STARTING FOR SAFETY
AMPLE CURRENT FOR LIGHTS, RADIO, ACCESSORIES

DELCO-REMY
DIVISION, GENERAL MOTORS CORPORATION

WHEREVER WHEELS TURN OR PROPELLERS SPIN

Steen he probably set a short-term record in action, having finished the job before he was sworn in.

PILOT'S EXPENSE—COT was supreme authority on procedure. Railway Express Agency was in charge of all cargo commitments. The strike ended before the authorized passenger practices system, which would have been handled by ATA, was established on the airlines. ATC was swamped with telephone calls for passenger preferences, because it had that function during the war. Brig. Gen. William H. Tanner, commander of the Continental Division of ATC, headquartered at Memphis, Tenn., was in charge of ATC emergency operations.

Pilot-Pay Claims Detailed by Union

ALPA bases figures on 80 hr. monthly, airline negotiating committee asserts vigorously.

ALPA, the AFL pilots union, last week completed presentation of its wage and working conditions claims before the President's three-man emergency panel and the 13 airlines of the Airline Negotiating Committee. The Committee immediately began answering the ALPA arguments.

While ALPA has not entirely ap-

propriated the railroad wage system for locomotive engineers, based on weight of an engine on the drivers, there is some parallel. Claims cover higher base pay, hourly and mileage compensation for larger and faster transports such as the Douglas DC-4 and Lockheed Constellation.

Although the legal limit of hours for pilots is 25 per month, or 1,033 hr. annually, the ALPA's claims, directed locklessly at TWA but indirectly affecting the entire industry, are based on 50 hr. per month. Union argues that 88 hr. is the actual average, and it cites a PCA average monthly flying time for a pilot of 73 hr., also a 78-hr. average on TWA. On the New York to Paris round trip, pilots claim 35 hr. are spent in actual flying and 37 hr. in work on the ground.

Base Pay—ALPA would increase base pay of captains to a minimum of \$440 for first year up to \$475 a month for eighth year on DC-4s, with \$35 premium in all cases for flying Constellation. Co-pilots' pay would also be increased to reach a top of \$184 a month after four years and they would remove both hours and mileage compensation.

Total Pay—Schedule of captain's compensation, based on a DC-4, is as follows, figuring 88 hr. a month flying time: First year, \$300 a month, plus \$138 for hours flown and \$215 for mileage, based on 16,



LANDIS CONFIRMED:

James M. Landis, whose nomination to succeed L. Welch Pogue as the Civil Aeronautics Board was endorsed by the Senate, is shown as he appeared before Senate Commerce Committee during its hearing on the appointment.

600 mi. per year at 268 mph, or \$1,390 per month and \$15,690 a year, eighth year, \$475 base pay, plus \$120 for hours and \$270 for mileage, or \$1,865 per month and \$15,108 per year.

For seven years \$106 a month or \$1,276 a year is added. Consequently pay is \$45 higher on the base, or \$523 for the first year with \$262.56 per month for hours, \$465.59 for mileage, and an extra of \$190 per month for bonus operation based on 18,336 mi. calculated annual flying. This amounts to \$1,323 a month and \$7,714 annually for all foreign flying.

The Airline Negotiating Committee says that these figures are based on less than the legal maximum of 1,600 hr. per year. Consequently, awarded for 55 hr. per month, annual pay on a Constellation would amount to \$1,165.84. ALPA argues that these overall figures are not high on a per-mile basis of cost to the air carrier. For example, they cite the captain's pay on a DC-4 at 4 1/2 hr. per mile for first year, 5 1/2 hr. for fourth year, and 7 1/2 hr. for eighth year. On a Constellation, computed at 18,336 mi. for a year, cost per mile is 3c for first year, 7c for fourth, and 9c for eighth year.

New Hour Table—ALPA has carried the table of hourly compensation set in Detention 63 to higher levels for transports larger than the Douglas DC-3, based on speed. Table follows, as follows: For 150



BRANIFF ENLARGES HEADQUARTERS:

An aerial view shows how Braniff Airways' headquarters at Love Field, Dallas, (A) will be enlarged through acquisition of the Lockheed Middlesex Center (B) recently released to the city of Dallas by the Army and leased by Braniff. The Fifth Ferrying Command occupies an area (C) adjacent to the Braniff base.

to 175 mph. (DC-3), per hour paid to pilot is \$4.60 per day and \$4.50 per hour. 175 to 200 mph. (Boeing Stratovert) \$4.40 per hour and \$7.35 per hour to 225 mph. (DC-4), \$9.70 and \$14.60, 225 to 250 mph. (unfilled at present), \$9.50 and \$14.60, 250 to 280 mph. (Consolidated), \$6 and \$9, and 280 to 320 mph. (unfilled at present), \$8.50 and \$14.60 per hour. **Vacations.**—The union, having introduced all kinds of evidence, including medical claims concerning effects on the pilots of altitude flying, also requests one month vacation annually, with pay based on 79 hr.



NEW AT ATA:

John W. Thompson (above) because Vice-President and Director of Information. **Jack J. Fox** for Air Transport Association. **Former Director of Public Relations for Ford Motor Co.,** Publicity Director for Consolidated Aircraft Corp. and Assistant Director of Public Relations for Consolidated Value Aircraft Corp., Thompson succeeds **Perley Boone**, who because of illness now has resigned as head of ATA public relations.

Former president and chairman of the Board of Northeast Airlines. The theme was that air transpor-

tation will not fill its purpose until the people in the industry "have adjusted our minds to thinking in terms of the direct costs of air transportation as a potential transport and not just ourselves to thinking of protecting only the Pullman market."

While not criticizing luxury handling of passengers, he believed that method emphasized so far as mass movement of passengers is concerned. This he expects to develop at an accelerated rate as forces come down. "It has been proven that true fare decreases drive passengers will increase at the rate of 3 percent for every 1 percent reduction in cost."

Included in his suggestion for simplification of terminal problems: **PAA** all-day service, covered ground transportation is and from airports in addition to air fare, with an emphasis on the ground transportation unit to handle passenger and baggage details.

Radio—transmission systems, with uniform information on flight destinations given, perhaps through a common telephone number, on all airlines using a given terminal. The public should be informed as the reason for any delay by means of a display in the terminal building. Such a display, **Solomon** thinks, would make it practical, if departures were irregular, for passengers to express their feelings. The company could not be faulted for being depicted on an early departure based on holding up an airplane which is already loaded.

Smoking—selecting, with one check-in of passengers, adoption of **Solomon's** idea on ground transportation would mean that a flight manager on the airport has would select and check-in the passenger and tell him how to board the plane with his baggage.

Changes in planes, among them self-contained stoves, several full-sized restaurants and cabs, adequate space so the passenger would be responsible for his own baggage, and reversible glass propellers to facilitate plane handling.

Solomon did not discuss purely operational problems at airports, but on the basis of his own experience as manager of the old **Windsor Airport** from 1933 to 1941 recommended that airport managers be vested, through full cooperation and authority from airlines, with enough power to deal directly with such problems. He was aware that business problems in connection with airport considerations will mean less and less attention to operational questions.

CAB Approves Braniff Foreign Line Control

CAB has approved suggestion of control of American Airways' A-1, by P. E. Braniff, president of Braniff Airways, but has rejected a request by the latter company that it be permitted to acquire control of the Mexican corporation.

In granting Braniff's alternate application, the Board specified that its approval would be effective only as long as Braniff Airways makes no contract or lease to the benefit of American Airways without first obtaining the Board's approval.

Proposed acquisition by Braniff, the Board said, is consistent with the public interest, but existence of an actual vote Braniff Airways might lead to use of that company's economic resources for the support of American.

Braniff Airways' schedule for foreign operations of \$10,000,000 of the \$4,900,000 received through recent refinancing, the Board said, represents an asset of Braniff, a domestic carrier, raised as a result of public acceptance of Braniff's ability in domestic operations.

In rejecting the Braniff Airways application, the Board said it was forced to recognize a probability that American would become a drain on the domestic line's resources. Perhaps expanding an ability to use assets would capital or material, it difficult to respond fully to "the evolutionary requirements of air transportation" without subsidy. The possibility of such a result, "obviously inconsistent with the public interest," led the Board to refuse the company's request for control of its Mexican subsidiary.

Prohibit, Northeast Granted Canadian Port Permits

Northeast Airlines and Pan American Airways have been licensed by the Canadian Air Transport Board to operate into Canada under international agreement. Northeast is to operate between Boston and Montreal, Boston and Montreal, N. B. Pan American will use Winnipeg, Tulane, as terminal air service from Seattle to Fairbanks.

Two members of the Board—Air Vice Marshal Alan Foster and J. P. K. Verbeke, are examining operating efficiency of air service in Canada and north from the Great Lakes to the Arctic Circle. Their findings probably will affect CATD decisions when airline licenses in that area

come up for renewal. Most of the scheduled operators in the region are subsidiaries of Canadian Pacific Air Lines, while intensity routes are operated by the government's Trans-Canada Air Lines. Numerous non-scheduled air services also are licensed in the area covered by the examination.

ATS Cancels Meet

Due to transportation difficulties and attendance by the airline-week and winter, the Aeronautical Training Society postponed its annual convention which was scheduled for Washington last week. While tentative plans call for the meeting later this month, exact date has not been set at press time.

Colonial Serves Masses

Colonial Airlines inaugurates daily service to White Plains and Massena, N. Y., as at New York and Washington to Montreal and Ottawa routes today (June 3). Such northern New York flights may be reversing scheduled air transportation for the first time.

Airline Discounts Outmoded, CAB Rules on PAA Decision

The use of discounts as a device to promote air travel has outlived its usefulness and should be abandoned as rapidly as possible, according to the Civil Aeronautics Board. This position was taken in a recent CAB decision clarifying a previous refusal to permit Pan American Airways' Latin American Division to lower its 25 percent discount to government employees.

The Board said its restraining order of last December was predicated largely upon CAA's objection to higher fares which would result from the tariff increases proposed by PAA and an no way reflected approval of the discount practice.

New tariff rules for PAA's Latin American Division reduce the discount from the prevailing 25 percent to 15 percent.

The higher fares which would avoid CAA objections by a provision that in no case will the new rates be more than those prevailing in September, 1942, in a 25 percent discount.

U.S. Air Service Up 25%

York up 14, and Detroit, up 79. The gain in flights serving New York would have been considerably larger were it not for the opening of service in February of Newark Airport, which at April 30 was handling 110 scheduled arrivals and departures daily.

Stats available to the public at the 10 cities named increased considerably more than the 25 percent rise in scheduled flights. By the end of April, attention of larger equipment, including Constellation and DC-4s is carrying up to 30 passengers a lot better in providing additional service.

Scheduled Daily Air Services (Including U.S. Cities)

City	Airlines Served	Arrivals and Departures			
		Sept. 30	Dec. 31	Mar. 31	Apr. 30
New York*	10	590	305	330	344
Chicago	10	248	279	304	330
Washington	6	332	358	383	278
Detroit	3	152	174	214	224
Los Angeles	10	258	185	185	185
Pittsburgh**	10	150	229	136	150
Dallas	10	142	146	150	144
Kansas City	10	122	125	133	140
Cleveland	10	108	112	124	124
Boston	10	178	122	122	120
Total		1,633	1,225	1,244	1,238

*Newark opened Feb. 3 and was served by 137 arrivals and departures in April 30.

**Including All American's pick-up flights.



WESTERN AVOIDS REFLECTIONS

Feature of the ticket office opened by Western Air Lines in Los Angeles recently is a windowless glass front. To avoid the interior making visible from outside and minimize reflections, glass was set in a protruding V-shape, protected from light from above and below by a dark non-reflecting canopy and black concrete sidewalk.

• 3 Helpful McGraw-Hill Books



• THE BUSINESS LAW OF AVIATION

By GORDON O. DRYDEN and
BRIAN G. DRYDEN

322 pages, \$15, \$8.95, \$5.00

Explores the aviation field with the areas applied to aviation law. Includes: insurance, liability, contracts, leases, mortgages, liens, and other legal aspects of aviation. Also covers the business law of aviation, including the business law of aviation, the business law of aviation, and the business law of aviation.

• JOB PLACEMENT OF THE PHYSICALLY HANDICAPPED

By CLARE D. BRIDGES, Director of Commercial and Industrial Rehabilitation, U.S. Civil Service Commission, U.S. Department of Labor

322 pages, \$15, \$8.95, \$5.00

This book is a guide to the physical handicapped in the aviation field. It covers the physical handicapped in the aviation field, including the physical handicapped in the aviation field, the physical handicapped in the aviation field, and the physical handicapped in the aviation field.

• BUSINESS EXECUTIVES GUIDE

By J. E. LARSEN, General Sales Manager, U.S. Civil Service Commission, U.S. Department of Labor

282 pages, \$15, \$8.95, \$5.00

A series of articles on the aviation field, including the aviation field, the aviation field, and the aviation field.

Mail Coupon for FREE TRIAL Copies

McGraw-Hill Book Co., 1221 Ave. of the Americas, New York 10, N.Y. I am interested in receiving a free trial copy of the book "The Business Law of Aviation" by Gordon O. Dryden and Brian G. Dryden. I am also interested in receiving a free trial copy of the book "Job Placement of the Physically Handicapped" by Clare D. Bridges. I am also interested in receiving a free trial copy of the book "Business Executives Guide" by J. E. Larsen.

Name _____
Address _____
City and State _____
Country _____
Phone _____
I am interested in receiving a free trial copy of the book "The Business Law of Aviation" by Gordon O. Dryden and Brian G. Dryden. I am also interested in receiving a free trial copy of the book "Job Placement of the Physically Handicapped" by Clare D. Bridges. I am also interested in receiving a free trial copy of the book "Business Executives Guide" by J. E. Larsen.

AIRCRAFT ENGINEERS

HOW would you like to work in a small aircraft company that has been in business for 21 years and is well established in the industry? We would like to expand our force with well qualified and experienced Engineers who like design and want to work under conditions that only a small company can offer.

POSITIONS

In our Engineering Department for the following:

**CHIEF DESIGNER
AERODYNAMICISTS
LAYOUT DRAFTSMEN
STRUCTURAL DESIGNERS**

We're giving full resume and position details to:

Box 327, Suite 417
1457 Broadway, N. Y. C.

AIRCRAFT Production Manager

Ability to oversee complete change of all planning, scheduling, and control functions. Minimum of 10 years' aircraft experience. An executive position in quality control company.

Write detailed qualifications with mail resume to:

MCDONNELL AIRCRAFT CORP.,
Combs St. Lockport, N.Y.
Box 614 St. Louis 1211, Mo.

SHORTLINES

• Delta has completed the first of seven DC-7s with the arrival recently of the third ship from Douglas Aircraft at Delta Station. After 12 years, Delta recently earned its millionth passenger, but estimates it will carry its second million in less than five.

• Eastern set profit of \$784,763 for the first quarter of this year over \$1,000,000 higher than the \$446,081 for the same period in 1945. The 1946 figure was the equivalent of \$6.25 per share in 1945 stock basis and \$8 cents on the newly split four for one common stock, compared with 7¢ and 18 cents respectively in the 1945 first quarter. Operating revenues were up 10 percent to \$5,148,195 and revenue before taxes up 10 percent to nearly 8 million.

• Pan American is using Convairliners exclusively between New York, London and Africa, and has assigned them to its daily New York-London-New York route. Howard Kribben, New York order and design engineer, has been made consultant on interior for the 70 Boeing Superliners PAA has on order.

• Trans-Canada Air Lines is opening offices this month at Chicago and Cleveland in connection with service between Toronto and these points in early summer.

• TWA will use two C-54As recently acquired on short term lease from Wey Associates Administration for International Pilot Training. Camera Set includes 120 ships, at which 20 crew of the large, four-engine transport type.

• United reports revenue passenger miles and revenue cargo miles in April month 303 and an estimated 10 per cent higher respectively than April, 1945. Passenger miles were 6,628,800, cargo miles 4,684,000. Air express and air freight were both up an estimated 14 percent over March.

• Capt. C. M. Chatterton, pilot on the last's western channel, has received a \$2,500 award for a suggestion for reducing pilot eye fatigue by use of "Knee and Light" in the cockpit. It was the highest award ever granted by the company's employee suggestion committee.

DIRECTOR OF PURCHASING

PREVIOUS EXPERIENCE IN AIRCRAFT PURCHASING. OPPORTUNITY TO HEAD UP ALL PROCUREMENT FOR BAYVIEW GROWING COMPANY.

Write detailed qualifications with mail resume to:

MCDONNELL AIRCRAFT CORP.,
Box 614 St. Louis 1211, Mo.

Esser to Pioneer

Basil, Inc., Texas federation, has changed its name to Pioneer Air Lines, Inc. Basil closed for Reopening, Safety and Service in the Air, but Robert J. Smith, company president, says it is official that "Pioneer" is a more descriptive name. The company is the first new operator to receive a CAB certificate since the Civil Aviation Act was passed, and the first certified for feeder air transport service. It has purchased DC-7s for use between the Gulf Coast and Alaska. Now being converted, the ships, with 30-passenger capacity, will be used for summer charters of the Southwest. A photo mural of the aircraft for whom each plane is named will be placed at the forward end of the cabin.

AAF Proposes Industry Hire Handpicked Officers

An unprecedented relationship between the AAF and the aircraft industry is proposed in the new AAF "Career Plan" recently announced by Maj. Gen. Fred L. Anderson, assistant chief of air staff for personnel.

The plan, calls for the placement of reserve officers, who have been handpicked by the AAF, in responsible jobs in the civilian aircraft industry for the primary purpose of hardening their air force careers. The Airpower League is expected to provide liaison between the AAF and the industry in placing the specially selected officers.

Regular officers will also be given an opportunity for a year's civilian experience in the industry. They will return to their military assignment after completion of one year in the industry but the handpicked reserve officers will become permanent fixtures of the industry according to the AAF plan.

The plan is not expected to become operative until the present reserve of air reserve officers built up during the war is depleted.

Panam Flies Oilmen

Pan American Airways expects to fly about 500 oil company personnel from Venezuela to the U. S. for visitation during the next three months in a series of special weekly trips. First flight was made May 18 when a DC-4 carried 48 employees of the British-McCord Oil Co. from La Guayra, near Caracas, to Houston.

ANNOUNCING

Aircraft & Aviation Insurance

HULL, LIABILITY and PERSONAL ACCIDENT

Preferred Policy Conditions and Rates Offered

To Members Of

Aircraft Owners and Pilots Association



KENNETH B. S. ROBERTSON LIMITED

414 ST. JAMES STREET WEST
MONTREAL, CANADA

NOTE:

Look to SkyCrafter
PRIVATE AIRPLANE

FOR BETTER—FAFER
AIR
TRANSPORTATION



Right on the nose of the new CESSNA

There's no doubt, such the new Cessna 170 with all the latest features and more for the same price. Also, you can get the new Cessna 170 with all the latest features and more for the same price. Also, you can get the new Cessna 170 with all the latest features and more for the same price.

Standard of Performance
SENSENIOR
SENSENIOR BROTHERS
LANCASTER, PA. ELLENDALE, CALIF.

The Collins 51N-1 Receiver



... Designed by a Famous Airline **Now available to all!**

The 51N-1 is a new single channel ground station receiver, designed in the communication laboratories of United Air Lines. Through special arrangement, the Collins Radio Company is manufacturing this receiver, for all commercial applications.

Reflecting the wide experience of United Air Lines, the 51N-1 is thoroughly and specifically engineered for airline reception and monitoring on any one channel between 2.5—12.0 mc.

Crystal control provides a very high order of stability. The performance characteristics exceed the requirements of airline radio reception. Simplex operation may be used for control purposes. Noise limiter, carrier control, b.f.o., and other special features are available on order.

For complete information, write to Collins Radio Company, Cedar Rapids, Iowa; 11 West 42nd Street, New York 18, N. Y.

IN RADIO COMMUNICATIONS, IT'S ...



SPECIFICATIONS:

Application: single frequency reception

Frequency range: 2.5—12.0 mc

Frequency control: quartz crystal

Signal to noise ratio: 10 db at 2 microvolts input across 100 ohms

Sensitivity: variable manually

Image rejection: 85 db minimum

Selectivity: 5 kc total bandwidth at 6 db down from resonant frequency; 16 kc at 60 db down

Weight: 29 pounds

Dimensions: standard 19" rack mounting panel, 8 1/4" h, 11" d

